CHAPTER 7
Water Supply Development Projects

The population in the Lower West Coast (LWC) Planning Area is expected to increase by about 74 percent, growing to about 1.6 million by 2025. Net water demand for all users is projected to increase by approximately 197 million gallons per day (MGD) between 2005 and 2025 to 821 MGD. Water to serve increased future urban demand is expected to be developed primarily from alternative water supplies, including brackish groundwater resources, surface water captured during wet weather and expansion of reclaimed water systems. Agriculture, the largest water user in the LWC Planning Area, must continue to improve irrigation practices to conserve water and, where feasible, use alternative supplies such as blended sources and tailwater/stormwater recovery systems.

This chapter provides a summary of the Water Supply Development projects anticipated to meet the needs of the LWC Planning Area for the next 20 years. Information is provided for each water use category, with a particular emphasis on the fast-growing Public Water supply sector. Additional details about individual users, projects, quantities developed and project costs can be found in **Appendices A**, **B** and **D**.

> Water supply development is defined in Section 373.019(24), Florida Statutes (F.S.), as the planning, design, construction, operation and maintenance of public or private facilities for water collection, production, treatment, transmission, or distribution for sale, resale or end use.

Local governments, government-owned and privately owned utilities, regional water supply authorities, multijurisdictional water supply entities, self-suppliers, and other water users are primarily responsible for Water Supply Development projects.

Water Supply Development projects selected for inclusion in this 2005–2006 LWC Plan Update primarily include alternative water supplies. As part of the planning process in preparing this plan update, the South Florida Water Management District (SFWMD or District) circulated a questionnaire to solicit information from municipal, agricultural and other water suppliers regarding the traditional and alternative water supply projects planned to meet their needs for the next 20 years. This process allowed local governments, water suppliers and water users to provide input on the proposed water supply projects included in the plan update.

Not all projects presented in the questionnaires are included in this plan update. Several considerations were evaluated to determine whether to include projects in this update, such as resource constraints, and whether the project actually contributes new supply. Many projects submitted reflect practices such as maintenance of existing facilities and improvements in the distribution system. While these projects reflect good utility practice, they do not represent alternative water supply projects.

Furthermore, a project identified for inclusion in this plan update may not necessarily be selected for development by the utility. In accordance with Section 373.0361(6), F.S., nothing contained in the water supply component of a regional water supply plan should be construed to require local governments, public or privately owned utilities, special districts, self-suppliers, multijurisdictional entities and other water suppliers to select that identified project. If the projects identified in this update are not selected by a utility, the utility will need to identify another method to meet its needs, advise the District of the alternate project(s) and include such information in its 10-Year Water Supply Facilities Work Plan.

Alternative water supply projects listed in this 2005–2006 LWC Plan Update include alternative water supply projects submitted by local suppliers specifically for consideration in this plan update; projects submitted and approved for cost-sharing funds from the District (and the Big Cypress Basin) in Fiscal Year 2006 under the alternative water supply portion of the new Water Protection and Sustainability Program; and, projects recommended by the District for utilities that showed an unmet future need. Thirty-five of the Fiscal Year 2006 alternative water supply projects were in the LWC Planning Area and received over $11.2 million in District allocated cost-share funding, and $5.8 million in Big Cypress Basin allocated funding. These funds are for construction of alternative water supply projects, and applicants must pay at least 60 percent of a project's construction costs.

The fact that an alternative water supply project has been included in this LWC Plan Update makes that project eligible for funding consideration, but does not guarantee District funding of that project. Inclusion in the plan update does not serve by itself as an application for funding. The alternative water supply funding requires completion and submittal (by the project owner) of a separate application for each project for which funding is requested on an annual basis. The application for alternative water supply funding, as well as submittal time frames and requirements are available from the District's Web site at http://www.sfwmd.gov/org/wsd/aws. Detailed information about all projects can be found in **Appendix A.**

Demand and supply conditions for the six major water use categories are evaluated in this chapter. Because the majority of growth in demand during the next 20 years will occur in the urban sector, and more specifically within the public water systems, particular emphasis is placed on evaluating future needs and recommending water supply projects within the Public Water Supply category.

PUBLIC WATER SUPPLY

Public Water Supply includes all potable uses served by municipal and private utilities. Public Water Supply demand is projected to grow from the current 128 MGD to 225 MGD in 2025. Public water demand is currently met through a combination of traditional groundwater and fresh surface water supplies, as well as alternative supplies, such as brackish groundwater.

Table 8 shows the comparison between projected Public Water Supply demand and future supply for each county in the LWC Planning Area for 2025. Regionwide, **Table 8** shows a surplus 2025 supply condition of about 99 MGD. Countywide information shows a range of surplus supply conditions. Utility summaries providing individual service area data are included later in this chapter. On a countywide basis, the largest projected surpluses occur in Lee and Collier counties, which account for about 98 percent of the Public Water Supply demands in the LWC Planning Area. **Chapter 2** and **Appendix D** provide additional details on the Public Water Supply demand and supply conditions.

The projected supplies in **Table 8** are based on existing permitted supplies; alternative water supply potable water projects submitted and approved for the District's 2006 alternative water supply funding; eligible potable water projects submitted by local water suppliers specifically for the 2005–2006 LWC Plan Update; and, District-recommended projects for those entities that did not supply project information and showed an unmet future need.

Table 8. Public Water Supply Demand and Supply Projections for 2025.

County	PWS Demand (MGD)	Projected Supplies (MGD)[a]	Projected Surplus or Deficit (MGD)
Charlotte[b]	0.0	0.0	0.0
Collier	109.3	147.0	37.7
Glades[c]	0.5	0.7	0.2
Hendry[c]	4.9	19.8	14.9
Lee	110.7	156.7	46.0
Monroe[d]	0.0	0.0	0.0
Total	225.4	324.2	98.8

a. Projected supplies include only potable water in Public Water Supply systems. Projected finished water yields from only those PWS projects that have been included in the utility summaries later in this chapter are shown. Areas served by Domestic Self-Supply shown as "zero" values.
b. State BEBR projections did not capture proposed development at Babcock Ranch in Charlotte and Lee counties. Proposed development of this 17,800 acres and associated water supply lacked data and sufficient analysis to support inclusion of projects in this plan update.
c. Counties have projected growth beyond that projected by BEBR, but have not sought FDCA approval for an exception to the use of BEBR projections. Such exception data will be considered by the District when available.
d. No development expected in the mainland portion of Monroe County.

Traditional public water supplies in the LWC Planning Area have included fresh groundwater from the Surficial and Intermediate aquifer systems and fresh surface water, primarily from the Caloosahatchee River. Approximately 60 percent of the region's current public water demand is met using traditional supplies. Existing demand and environmental constraints will continue to limit development of new traditional supplies sufficient to meet the increasing water demand in the planning area. Although some new traditional supply development may be practicable given appropriate local conditions, reductions in historical water use, and opportunities for addressing adverse impacts, the availability and permittability of new traditional supplies to meet projected demands through 2025 have not been demonstrated. As such, the yield from most proposed new

traditional supply projects has not generally been included in this plan update as a component of supply available to meet future demand.

The decision not to include most new traditional supply development projects in the plan update should not be interpreted as precluding development of these sources so long as that development is done in compliance with the District rules. In fact, some traditional freshwater projects have been included in this plan update. These projects reflect expansion of small systems currently relying on fresh groundwater to meet their needs. Inclusion of these freshwater projects in the plan update does not confer any special permitting status or relieve the permit applicant for such systems from meeting all District rule criteria in order to qualify for a permit.

The availability of new supply from the freshwater aquifers in the LWC Planning Area is limited due to resource issues, including wetland protection, saltwater intrusion and aquifer protection criteria. Land use changes anticipated in the region include the reduction in agricultural acreage in Collier and Lee counties, but increased agricultural acreages in Hendry and Glades counties. These changes, especially the reduction in agricultural lands in Lee and Collier counties, may create opportunities for other water users to seek new freshwater allocations. Such opportunities should be addressed on a case-by-case basis due to the site-specific variations that occur in aquifer confining units and other factors.

Operational differences between use types (such as Agricultural and Public Water Supply) may play a major role in determining the availability of water for allocation. Existing agricultural uses are generally seasonal, retain water on-site, frequently using flood irrigation systems, which tend to raise the water table. On the other hand, most urban uses, including Public Water Supply, are year-round and distribute the water for use in remote locations. Such uses do not result in recharge of groundwater in the immediate area of the wellfield and are prone to have greater resource impacts in the immediate area.

Thus, careful analysis will continue to be required in this rapidly growing region when considering proposals for new water uses to ensure the resource protection criteria can be met by the new use.

Combining the projects submitted for the LWC Plan Update, the 2006 projects in the LWC Planning Area that received funding, and the projects developed by the District, a total of 153 water supply projects were evaluated as part of this plan update development.

Fourteen traditional supply projects were evaluated, including 11 submitted by local utilities and three projects developed by the District to support an unmet future need by small local utilities. In total, if all of these projects were permittable and developed as proposed, they represent about 25 MGD in new supply capacity.

One hundred seventeen alternative water supply projects were evaluated in this process. The alternative sources these projects propose to use include the following:

- Brackish Water: Forty-one projects yielding a potential 231 MGD (finished water).
- Reclaimed Water: Fifty-five projects with a total constructed capacity of 307 MGD.
- Aquifer Storage and Recovery (ASR): Thirteen projects with a total dry-season capacity of 32 MGD.
- Surface Water: Eight projects with a total design capacity of 42 MGD.

Water conservation is a critical part of the District's efforts to protect and preserve the region's water resources. Although individual water conservation projects are not included in this chapter, the District's Water Conservation Program and local components are discussed in **Chapter 5**. The SFWMD's programs include an annual funding initiative for water conservation efforts.

Other types of water supply projects submitted for consideration in this LWC Plan Update include monitoring systems, wastewater disposal wells and distribution system improvements, such as potable water interconnections between local governments, finished water storage tanks, pipelines, booster stations, pump upgrades and backup power supplies. While these types of projects are appropriate for utility management and maintenance, they do not generate new water supply and were not included in this plan update.

Individual summary pages are provided herein that identify demand and supply projections for the major utilities in the LWC Planning Area. Yield from existing supplies and new alternative water supply projects is compared with projected water demand for each service area in the years 2015 and 2025. Reclaimed and other nonpotable alternative water supply projects are shown, but not counted toward meeting future potable demand. The reuse of reclaimed water is widespread in the LWC Planning Area, and 55 additional projects have been proposed by major utilities to expand their systems during the next 20 years. The benefits of different reuse applications vary not only in terms of the project, but also in terms of location. For example, installing and mandating hook-ups to a reuse irrigation system in an area using treated drinking water from a municipal utility will lower the utility's per capita consumption and allow the utility to serve more customers with the same volume of potable water.

On the other hand, supplying reclaimed water to self-supplied operations, such as golf courses or other large users, can reduce competition for limited freshwater resources, but does not result in a reduction in demand on the potable water system. The replacement of a self-supplied withdrawal with reuse will not necessarily result in an additional freshwater allocation for the utility.

Other reuse projects, such as wetland or canal recharge, can be designed to support additional allocations by offsetting resource impacts that might preclude permitting of additional wells.

The SFWMD strongly supports reuse projects, and recognizes reuse applications have multiple benefits for the implementing utility. At the planning level, however, it is difficult to predetermine the potential offset without defining and analyzing the distribution of the reuse. Such offsets will be quantified on a case-by-case basis in the consumptive use permitting process based on the reclaimed water plans developed by the provider.

In the LWC Planning Area, 15 utilities had adequate supplies to meet future demand considering the combination of projects they submitted and existing supplies. Seven utilities in the planning area showed an unmet need in future supply and did not submit projects appropriate for consideration in the plan. In the case of unmet needs, the District has recommended projects for the local utilities to be included in the LWC Plan Update.

Utility Summaries

Charlotte County

Supply Entity: Charlotte County Utilities

Service Area: Charlotte County

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

Water supplies in this area of Charlotte County are all Domestic Self-Supply, comprised of traditional fresh groundwater. Future supplies shown for the area are also projected to be Domestic Self-Supply. The county has proposed development of a 40-MGD brackish supply on the Babcock Ranch to meet demand in its service area, but outside of the SFWMD. Projects that supply water outside of the SFWMD have not been included in the plan update and are not eligible for SFWMD funding. A proposed 17,800-acre development on the Babcock Ranch has not been considered in these projections.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population[a]	6,163	7,525	8,673
Per Capita (gallons per day finished water)		127	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	0.8	1.0	1.1
Volume from Traditional Sources[b]	0.0	0.0	0.0
Volume from Alternative Sources	0.0	0.0	0.0
Volume of Reclaimed Water Made Available	0.0	0.0	0.0
Additional Potable Water Needed	0.0	0.0	0.0

a. Population within the portion of Charlotte County inside of the SFWMD.
b. All current and projected supply in this portion of the county is Domestic Self-Supply.

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	N/A
Alternative[a]			$0.0
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	0.0	0.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.0	0.0	
Other	0.0	0.0	
Totals	0.0	0.0	$0.0

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Collier County

Supply Entity: Ave Maria Utilities

Service Area: Ave Maria

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

Ave Marie Utilities has a current permit for 1.3 MGD and proposes future water supplies from fresh groundwater. Proposals for increased withdrawals for fresh groundwater have generally not been included in this plan update due to uncertainties about resource issues. Exclusion of new freshwater proposals from this plan update does not limit or influence the permittability of these supply projects. Supporting studies will be needed to determine availability of traditional sources, which are limited by resources and other constraints. Due to the uncertainty of availability of the resource, the SFWMD recommends a brackish water supply project to meet future needs for this development.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	0	17,142	30,200
Per Capita (gallons per day finished water)		109	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	0.0	1.9	3.3
Volume from Traditional Sources	1.3	1.3	1.3
Volume from Alternative Sources	0.0	2.0	4.0
Reclaimed Capacity Available	0.0	2.3	4.7
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0[a]	0.0[a]	N/A
Alternative			$20.6
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water[b]	2.0	4.0	
Seawater	0.0	0.0	
Reclaimed Water	2.3	4.7	
Other	0.0	0.0	
Totals	4.3	8.7	N/A

a. Traditional project not shown included expansion of membrane softening plant and installation of additional Lower Tamiami production well capacity.

b. SFWMD proposed brackish water supply project totals 4 MGD RO capacity, six new production wells.

Collier County

Supply Entity: Collier County Public Utility Department

Service Area: Portions of Unincorporated Collier County

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

Water supplies are currently about 50 percent traditional fresh groundwater and 50 percent alternative water supplies. The county proposal to develop approximately 15 MGD in new traditional project capacity by 2025 has not been included here. Exclusion of freshwater projects from this plan update does not limit or influence the permittability of these supply projects. Supporting studies will be needed to determine availability of traditional sources, which are limited by resources and other constraints.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	155,739	243,426	342,711
Per Capita (gallons per day finished water)		185	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	29.5	45.0	63.4
Volume from Traditional Sources	17.1	17.1	17.1
Volume from Alternative Sources	16.0	40.0	74.0
Reclaimed Capacity Available	21.6	33.5	50.8
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional[a]	0	0	$0.0
Alternative			$580.0
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	24.0	58.0	
Seawater	0.0	0.0	
Reclaimed Water[b]	11.9	29.2	
Other (finished water ASR) [c]	9.0	9.0	
Totals	44.9	96.2	$580.0

a. Freshwater quantities associated with five projects submitted by the county not included.
b. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.
c. Finished water ASR capacity is a seasonal capacity. Quantity not included in Population & Supply Summary table above.

Collier County

Supply Entity: U.S. Water Corporation

Service Area: Everglades City

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

Water supplies are currently 100 percent traditional fresh groundwater. U.S. Water Corp. operates and maintains the water and wastewater facilities under a contract with the city. Since no projects were submitted by the city or U.S. Water for the LWC Plan Update, the project listed below reflects a SFWMD-proposed project for the city to meet future water demand. Although the project contemplates fresh groundwater development, site-specific conditions evaluated during the permitting process will determine actual resource availability. The city should contemplate a back-up plan for supply, including additional conservation and alternative water supply development, in the event that local conditions do not support the project below.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	1,367	1,767	2,219
Per Capita (gallons per day finished water)		315	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	0.4	0.6	0.7
Volume from Traditional Sources	0.3	1.0	1.0
Volume from Alternative Sources	0.0	0.0	0.0
Reclaimed Capacity Available	0.1	0.1	0.1
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.7	0.7	$0.932
Alternative[a]			$0.000
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	0.0	0.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.0	0.0	
Other	0.0	0.0	
Totals	0.7	0.7	$0.932

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Collier County

Supply Entity: Florida Governmental Utility Authority (FGUA)

Service Area: Golden Gate

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

Water supplies are currently 100 percent traditional fresh groundwater. A supply deficit condition is projected between 2011 and 2015. The FGUA did not provide any projects for the LWC Plan Update. The project listed below reflects a SFWMD-recommended project for FGUA to meet future demand. Although the project contemplates fresh groundwater development, site-specific conditions evaluated during the permitting process will determine actual resource availability. The FGUA should contemplate a back-up plan for supply, including additional conservation and alternative water supply development, in the event that local conditions do not support the project below.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	14,001	16,723	19,805
Per Capita (gallons per day finished water)		105	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	1.5	1.8	2.1
Volume from Traditional Sources	1.7	2.9	2.9
Volume from Alternative Sources	0.0	0.0	0.0
Reclaimed Capacity Available	0.9	0.9	0.9
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	1.2[a]	1.2[a]	$3.9
Alternative			$0.0
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	0.0	0.0	
Seawater	0.0	0.0	
Reclaimed Water	0.0	0.0	
Other	0.0	0.0	
Totals	1.2	1.2	$3.9

a. Project includes 1.2 MGD WTP increase, 0.2 MGD increase in permitted ADF and 0.5 MGD increase in permitted peak withdrawals.

Collier County

Supply Entity: Immokalee Water and Sewer District

Service Area: City of Immokalee

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

The present supplies are comprised of 100 percent traditional groundwater. A supply deficit condition is projected beginning in the 2006 to 2010 time frame. Since the Immokalee Water and Sewer District has not submitted any projects to address future demand increases, the project listed below represents a SFWMD-proposed project for the Immokalee Water and Sewer District to meet future demands.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	22,572	31,637	41,901
Per Capita (gallons per day finished water)		143	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	3.2	4.5	6.0
Volume from Traditional Sources	3.3	3.3	3.3
Volume from Alternative Sources	0.0	3.0	4.5
Reclaimed Capacity Available	2.5	2.5	2.5
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	$0.0
Alternative[a]			$22.8
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	3.0	4.5	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.0	0.0	
Other	0.0	0.0	
Totals	3.0	4.5	$22.8

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Collier County

Supply Entity: City of Marco Island Public Works Department

Service Area: City of Marco Island

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

The present supplies are comprised of about 60 percent traditional fresh surface water and 40 percent alternative water supplies. The majority of new potable supplies for Marco Island rely on harvest of wet season supply from Marco Lakes/Henderson Creek with ASR storage, and installation of new treatment capacity on the island.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	16,121	17,741	19,576
Per Capita (gallons per day finished water)		470	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	8.0	8.4	9.2
Volume from Traditional Sources[a]	5.2	5.2	5.2
Volume from Alternative Sources[a]	3.6	5.9	5.9
Volume of Reclaimed Water Made Available	1.4	3.9	3.9
Additional Potable Water Needed	0.0	0.0	0.0

a. Projected capacities reflect current CUP quantities.

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	N/A
Alternative[a]			$38.6
Captured Storm Water / Surface Water	2.3	2.3	
Brackish Water	0.0	0.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	2.5	2.5	
Other	0.0	0.0	
Totals	4.8	4.8	$38.6

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Collier County

Supply Entity: City of Naples Public Utility Department

Service Area: City of Naples

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

The present supplies are comprised of 100 percent traditional fresh groundwater. New potable supplies for the city will be developed from brackish groundwater.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	56,722	65,587	75,625
Per Capita (gallons per day finished water)		321	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	19.6	21.3	24.6
Volume from Traditional Sources	18.1	18.1	18.1
Volume from Alternative Sources	0.0	10.0	10.0
Reclaimed Capacity Available[a]	9.0	11.7	11.7
Additional Potable Water Needed	0.0	0.0	0.0

a. Reclaimed capacity available for 2015 and 2025 includes 2.7 MGD from stormwater capture project below.

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	$0.0
Alternative			$68.2
Captured Storm Water / Surface Water	2.7	2.7	
Brackish Water	10.0	10.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.0	0.0	
Other (potable water ASR)	0.0	0.0	
Totals	12.7	12.7	$68.2

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Glades County

Supply Entity: Moore Haven Utilities

Service Area: City of Moore Haven

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

The present supplies are comprised of 100 percent traditional fresh groundwater. A deficit supply condition is projected beginning in the 2006–2010 time frame. Since Moore Haven Utilities did not submit any projects for the LWC Plan Update, the project listed below reflects a SFWMD-proposed project for the city to meet future demand. Although the project contemplates fresh groundwater development, site-specific conditions evaluated during the permitting process will determine actual resource availability. The city should contemplate a back-up plan for supply, including additional conservation and alternative water supply development, in the event that local conditions do not support the project below.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	3,156	3,627	3,947
Per Capita (gallons per day finished water)		127	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	0.4	0.5	0.5
Volume from Traditional Sources	0.4	0.7	0.7
Volume from Alternative Sources	0.0	0.0	0.0
Volume of Reclaimed Water Made Available	0.0	0.0	0.0
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.3	0.3	$0.477
Alternative[a]			$0.0
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	0.0	0.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.0	0.0	
Other (potable water ASR)	0.0	0.0	
Totals	0.3	0.3	$0.477

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Hendry County

Supply Entity: Clewiston Public Utilities

Service Area: City of Clewiston

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

Water supplies are currently 100 percent traditional fresh surface water provided by U.S. Sugar Corp. The city's new brackish water facilities are expected to be completed by the summer of 2008, at which time U.S. Sugar water deliveries will be terminated and future water supplies will be 100 percent alternative water supplies. The new alternative water supply facilities will also serve demand (formerly served by U.S. Sugar) in the South-Shore Water Association (SSWA) service area adjacent to Clewiston. The SSWA is within the Lower East Coast Planning Area.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	15,881	18,677	20,949
Per Capita (gallons per day finished water)		115	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	1.8	2.1	2.4
Volume from Traditional Sources[a]	5.8	0.0	0.0
Volume from Alternative Sources	0.0	3.0	3.0
Reclaimed Water Capacity	1.5	2.5	2.5
Additional Potable Water Needed	0.0	0.0	0.0

a. Clewiston is currently supplied water by U.S. Sugar. Existing traditional source data reflect total permitted capacity of U.S. Sugar withdrawals.

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	N/A
Alternative[a]			$22.3
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	3.0	3.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	1.0	1.0	
Other	0.0	0.0	
Totals	4.0	4.0	$22.3

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Hendry County

Supply Entity: Florida Department of Corrections

Service Area: Hendry Correctional Institution

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

Water supplies are currently 100 percent traditional fresh groundwater. Future supplies are projected to remain 100 percent fresh groundwater.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	1,362	1,640	1,865
Per Capita (gallons per day finished water)		161	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	0.2	0.3	0.3
Volume from Traditional Sources	0.6	0.6	0.6
Volume from Alternative Sources	0.0	0.0	0.0
Reclaimed Capacity Available	0.4	0.4	0.4
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	N/A
Alternative[a]			$0.0
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	0.0	0.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.0	0.0	
Other	0.0	0.0	
Totals	0.0	0.0	$0.0

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Hendry County

Supply Entity: LaBelle Utilities

Service Area: City of LaBelle

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

The present supplies are comprised of 100 percent traditional fresh groundwater. Future supplies are projected to be 100 percent alternative water supplies. Once the brackish supply system is completed (2009), the current fresh groundwater facilities will be decommissioned. Future supply capacities projected by LaBelle Utilities reflect growth well beyond BEBR projections. The city should work with FDCA to reconcile growth projections.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	5,279	7,150	8,671
Per Capita (gallons per day finished water)		135	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	0.7	1.0	1.2
Volume from Traditional Sources	0.6	0.0	0.0
Volume from Alternative Sources	0.0	5.0	8.0
Volume of Reclaimed Water Made Available	0.2	0.8	1.8
Additional Potable Water Needed	0.6	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	$0
Alternative[a]			$51.3
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	5.0	8.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.8	1.8	
Other	0.0	0.0	
Totals	5.8	9.8	$51.3

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Hendry County

Supply Entity: Hendry County

Service Area: Portions of Unincorporated NW Hendry County

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

The present supplies in this area are all Domestic Self-Supply. Future service to the area is proposed by the county as part of an integrated regional services network, including water and wastewater. Future supplies are proposed to consist of alternative water supplies. Future supply capacities projected by Hendry County reflects growth well beyond BEBR projections. The county should work with FDCA to reconcile growth projections.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	5,279	7,150	8,671
Per Capita (gallons per day finished water)		135	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	0.0	0.4	0.7
Volume from Traditional Sources	0.0	0.0	0.0
Volume from Alternative Sources	0.0	2.7	5.0
Volume of Reclaimed Water Made Available	0.0	1.2	3.0
Additional Potable Water Needed	0.6	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	$0
Alternative[a]			$27.0
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	2.7	5.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	1.2	3.0	
Other	0.0	0.0	
Totals	3.9	8.0	$27.0

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Hendry County

Supply Entity: Port LaBelle Utilities

Service Area: Port LaBelle, Portions of Unincorporated Hendry and Glades Counties

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

The present supplies are comprised of 100 percent traditional fresh groundwater. Port LaBelle Utilities submitted three traditional projects to meet future demands. Only one of the projects, development of a 0.9 MGD membrane softening plant, is included in this utility summary. Although the project contemplates fresh groundwater development, site-specific conditions evaluated during the permitting process will determine actual resource availability.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	3,355	4,113	4,729
Per Capita (gallons per day finished water)		78	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	0.3	0.3	0.4
Volume from Traditional Sources	0.3	0.9	0.9
Volume from Alternative Sources	0.0	0.0	0.0
Volume of Reclaimed Water Made Available	0.3	0.8	2.3
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.9[b]	0.9[b]	$5.6
Alternative[a]			$12.0
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	0.0	0.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.5	2.0	
Other	0.0	0.0	
Totals	1.4	2.9	$17.6

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process. Reclaimed water projects shown here reflect demand and facilities in excess of SFWMD projections.

b. Reflects proposed new 0.9 MGD membrane softening facility with net increase of 0.7 MGD in permitted ADF.

Lee County

Supply Entity: Bonita Springs Utilities, Inc.

Service Area: City of Bonita Springs, Portions of Unincorporated Lee County

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

The present supplies are comprised of about 46 percent traditional groundwater supplies and 54 percent brackish groundwater. New potable supplies developed by BSU will involve expansion of the existing brackish groundwater facilities.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	45,446	67,534	85,850
Per Capita (gallons per day finished water)		172	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	7.8	11.6	14.7
Volume from Traditional Sources	5.6	5.6	5.6
Volume from Alternative Sources	6.5	12.5	12.5
Volume of Reclaimed Water Made Available	10.3	10.3	10.3
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	$0.0
Alternative[a]			$29.9
Captured Storm Water / Surface Water	0.6	0.6	
Brackish Water	6.0	6.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.0	0.0	
Other	0.0	0.0	
Totals	6.6	6.6	$29.9

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Lee County

Supply Entity: Cape Coral Public Utility Department

Service Area: Cape Coral

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

Water supplies are currently 100 percent alternative water supplies. Future supplies are projected to remain 100 percent alternative water supplies. Projected reclaimed capacity includes captured storm water and reclaimed from the Project Summary below.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	104,118	189,739	260,035
Per Capita (gallons per day finished water)		135	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	14.0	25.6	35.1
Volume from Traditional Sources	0.0	0.0	0.0
Volume from Alternative Sources	14.4	39.0	50.4
Reclaimed Capacity Available[a]	25.3	71.2	83.3
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity[a] (MGD) 2015	Gross Capacity[a] (MGD) 2025	Estimated Capital Cost ($ million)
Traditional (3 projects)	0.0	0.0	$0.0
Alternative[a]			$778.0
Captured Storm Water / Surface Water	1.5	1.5	
Brackish Water	24.6	36.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	44.4	56.5	
Other	0.0	0.0	
Totals	70.5	94.0	$778.0

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process. Reclaimed projects in this particular case also include harvest of surface water from local canals and an extensive ASR system supporting the reuse system.

Lee County

Supply Entity: Florida Governmental Utility Authority

Service Area: Lehigh Acres

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

Water supplies are currently 100 percent traditional fresh groundwater. A supply deficit condition is projected between 2006 and 2010. Since no projects were submitted by FGUA for the LWC Plan Update, the project below reflects a SFWMD-proposed project for FGUA to meet future water demand.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	29,803	51,873	69,996
Per Capita (gallons per day finished water)		101	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	3.0	5.2	7.1
Volume from Traditional Sources	3.3	3.3	3.3
Volume from Alternative Sources	0.0	3.0	5.5
Reclaimed Capacity Available	2.4	2.4	2.4
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	N/A
Alternative[a]			$27.5
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	3.0	5.5	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.0	0.0	
Other	0.0	0.0	
Totals	3.0	5.5	$27.5

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Lee County

Supply Entity: Fort Myers Public Utility Department

Service Area: City of Fort Myers

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

Water supplies are currently 100 percent alternative water supplies (brackish). Future supplies are projected to remain 100 percent alternative water supplies.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	56,287	73,301	85,465
Per Capita (gallons per day finished water)		140	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	7.9	10.1	12.0
Volume from Traditional Sources	0.0	0.0	0.0
Volume from Alternative Sources	9.6	17.6	20.0
Reclaimed Capacity Available	1.5	15.0	15.0
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	N/A
Alternative[a]			$83.6
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	8.0	10.4	
Seawater	0.0	0.0	
Reclaimed Water[a]	13.5	13.5	
Other (finished water ASR) [b]	1.0	1.0	
Totals	22.5	24.9	$83.6

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.
b. Finished water ASR capacity is a seasonal capacity. Quantity not included in Population & Supply Summary table above.

Lee County

Supply Entity: Greater Pine Island Water Association

Service Area: Pine Island and Franchise Area within Cape Coral

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

The present supplies are comprised of 100 percent brackish groundwater. Since no projects were submitted by the Greater Pine Island Water Association (GPIWA) to address the projected increased demands, the project shown below reflects a SFWMD-proposed project for GPIWA to meet future demand. The GPIWA service area boundaries may be amended in the near future, which will affect the projected population and demand. These changes will be addressed in a subsequent LWC Plan Amendment or Update.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	12,024	17,078	22,870
Per Capita (gallons per day finished water)		122	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	1.5	2.2	2.8
Volume from Traditional Sources	0.0	0.0	0.0
Volume from Alternative Sources	1.3	3.3	3.3
Volume of Reclaimed Water Made Available	0.0	0.0	0.0
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	N/A
Alternative[a]			$9.25
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	2.0	2.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.0	0.0	
Other	0.0	0.0	
Totals	2.0	2.0	$9.25

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

Lee County

Supply Entity: Island Water Association

Service Area: City of Sanibel and Little Captiva Island

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

The present supplies are comprised of 100 percent brackish groundwater. Treatment capacity exists to meet future demands. Island Water will need to apply for an increase in permitted average daily withdrawals from the brackish supply to meet future demand conditions.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	7,751	8,300	8,547
Per Capita (gallons per day finished water)		493	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	3.7	4.1	4.2
Volume from Traditional Sources	0.0	0.0	0.0
Volume from Alternative Sources	5.2	5.2	5.2
Reclaimed Capacity Available	1.7	1.7	1.7
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	$0.0
Alternative			$1.5
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	0.0	0.0	
Seawater	0.0	0.0	
Reclaimed Water[a]	0.0	0.0	
Other (finished water ASR) [b]	1.2	1.2	
Totals	1.2	1.2	$1.5

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.
b. Finished water ASR capacity is a seasonal capacity. Quantity not included in Population & Supply Summary table above.

Lee County

Supply Entity: Lee County Utilities

Service Area: Portion of Unincorporated Lee County

Population and Supply Summary:

Proposed supply projects by 2015: Adequate

Proposed supply projects by 2025: Adequate

Present supplies are comprised of 78 percent traditional fresh groundwater and 22 percent alternative water supplies. The county also purchases water from Bonita Springs Utilities, Fort Myers and Cape Coral.

Item	2005 (Existing)	2015 (Projected)	2025 (Projected)
Population	201,286	250,687	291,302
Per Capita (gallons per day finished water)		118	
(Note: All potable volumes are finished water unless noted.)	**MGD**	**MGD**	**MGD**
Potable Water Demand (average annual)	23.7	29.6	34.3
Volume from Traditional Sources	22.8	22.8	22.8
Volume from Alternative Sources	6.5	17.7	17.7
Volume of Reclaimed Water Made Available	14.3	18.8	19.8
Additional Potable Water Needed	0.0	0.0	0.0

Project Summary:

Project Type	Gross Capacity (MGD) 2015	Gross Capacity (MGD) 2025	Estimated Capital Cost ($ million)
Traditional	0.0	0.0	$0.0
Alternative			$45.1
Captured Storm Water / Surface Water	0.0	0.0	
Brackish Water	11.2	11.2	
Seawater	0.0	0.0	
Reclaimed Water[a]	4.5	5.5	
Other (potable water ASR)[b]	0.4	0.4	
Totals	16.1	17.1	$45.1

a. Reclaimed water in some applications may reduce per capita demands or offset some limitations on resource availability. This will be examined on a case-by-case basis during the permitting process.

b. Finished water ASR capacity is a seasonal capacity. Quantity not included in Population & Supply Summary table above.

AGRICULTURAL WATER USE

Agricultural water use includes supplies for crop irrigation. This plan update does not include estimates for livestock watering or aquaculture, the former because of its small size and the latter because most of the use represents a localized flow-through process in which the water returns to the source from which it was taken.


Citrus in the LWC Planning Area

Traditional water sources used for irrigation include fresh surface water and/or fresh groundwater. In the LWC Planning Area, overall agricultural acreage is expected to increase by about 13,400 acres to a total of 361,175 acres. Coastal counties, including Lee and Collier, will collectively lose about 12,300 acres of agricultural lands, primarily to urban development. Inland counties, such as Hendry and Glades, are projected to gain about 25,500 acres of agricultural production. Net water use by agriculture is expected to increase about 4 percent (17 MGD) to 422 MGD by 2025. Additional details on agricultural water use and projected demands are provided in **Appendix D**.

The shift in agricultural acreage from coastal counties to interior counties will produce a corresponding shift in the location of these demands. Traditional sources may or may not be available to meet all new irrigation requirements depending on the specific locations for new operations. Fresh groundwater may be available, but quantities will depend on local conditions, including other uses in the area. In summary, although freshwater resource conditions are expected to be adequate on a large scale to meet the projected future agricultural needs, site-specific conditions may affect availability. Under the circumstances, alternative water supply opportunities should be considered during planning of new agricultural operations in basins where water availability is limited.

As described earlier in this document, there are uncertainties in the availability of traditional water sources that cannot be resolved by this planning effort. This does not preclude agricultural water users from applying for and potentially acquiring consumptive use permits from traditional sources, so long as the conditions of permit issuance are satisfied.

Alternative water supply opportunities for agriculture include storage and application of reclaimed water, storm water, blending (brackish and fresh water), and recapture and reuse of water normally lost to a farm’s water management system (tailwater recovery). The type of irrigation system used for various agricultural operations has a significant effect on the amount of water needed to be withdrawn to meet crop

demands. Although individual growers select the irrigation system used in their operations, their choice is influenced by the conservation and efficiency requirements in the District's consumptive use permitting (CUP) process as it applies to new installations and permit renewals. New permits for agricultural use generally are required to install low-volume irrigation systems, such as drip or under-tree spray irrigation. The District also offers irrigation audits through the mobile irrigation labs (MILs) serving the LWC Planning Area. These efforts are discussed in **Chapter 5** and **Appendix I**.

THERMOELECTRIC POWER GENERATION SELF-SUPPLY

Thermoelectric Power Generation water use in the LWC Planning Area is expected to grow by approximately 67 MGD during the next 20 years as Florida Power & Light (FPL), south Florida's major power generator, develops new facilities in the LWC Planning Area. Currently, the only power generation facility in the LWC Planning Area is the FPL facility east of Fort Myers. Cooling water for this facility is provided primarily through a brackish water intake on the Caloosahatchee River. The new projected quantity (67 MGD) represents the evaporative losses and boiler make-up water required each day to operate the future facilities, not the total water throughput for each plant. Cooling water sources were unspecified by FPL; however, cooling water needs at other power generation facilities in western and southern Florida are met through a variety of sources, including fresh groundwater, fresh surface water, brackish water and seawater.

No projects were submitted to meet future Thermoelectric Power Generation needs. Considering the expected net water demand for the proposed new FPL power plants (67 MGD), and the freshwater limitations in the LWC Planning Area, an alternative water supply, such as brackish water from the Lower Hawthorn Aquifer, surface water captured during high-flow events or a combination of these resources, are expected to provide the most feasible options to meet the cooling water needs at future power generation facilities.

RECREATIONAL SELF-SUPPLY

The Recreational Self-Supply category includes irrigation for large landscaped areas, such as parks, golf courses and cemeteries. Historically, irrigation supplies for this category include local fresh groundwater and surface water captured from canals or from ponds in storm water management systems. In recent years, to meet CUP requirements, irrigation for new golf courses often includes blending brackish groundwater with surface water on-site to

Golf Course in the LWC Planning Area

meet turf irrigation needs. In the LWC Planning Area, Recreational Self-Supply water demand is projected to increase from the current 39.5 MGD to 46.6 MGD in 2025.

Considering the projected modest increase for growth in this category, most future supplies will come from alternative water supplies and blended supplies (brackish groundwater and fresh surface water). Reclaimed water is primarily used for irrigating large landscaped areas, such as golf courses, parks and cemeteries, as well as for residential and commercial landscaping. Projects submitted by utilities and wastewater generators specify that significant additional reclaimed water will be made available in the future. In most cases, the specific users cannot be identified, but the overall annual average quantity of reclaimed water expected to be made available from new projects in the LWC Planning Area during the next 20 years is about 140 MGD. This includes quantities from reclaimed water treatment plants, and flows captured from seasonal surface water sources for use specifically in the reclaimed system. Of the total amount of new reclaimed supply, over 50 percent is estimated to be available for bulk distribution for such uses as recreational irrigation needs. This amount of newly generated reclaimed water supply is greater than the expected growth in Recreational Self-Supply demand in the LWC Planning Area, which will provide an opportunity to switch current users from traditional sources to reclaimed water.

COMMERCIAL AND INDUSTRIAL SELF-SUPPLY

Commercial and Industrial Self-Supply demand is estimated to grow from the current 26.6 MGD to 28.9 MGD in 2025. Many commercial and industrial water uses are met through public water supply utilities. Others are self-supplied small users located remotely from public water supply lines, and their use falls below the 0.1 MGD (100,000 gallons per day) limit for identification of individual users in this plan update. The estimates in this plan update include the larger self-supplied users, most of which have historically relied on fresh groundwater and, to a limited extent, fresh surface water.

Considering the minimal additional projected need and the lack of specific locations or projects submitted for future commercial/industrial self-supply, traditional supplies, such as fresh groundwater, are expected to be sufficient to meet future needs in this category. Although fresh groundwater supplies are generally considered adequate to meet the relatively small new demands projected for this use category, alternative water supply development may be warranted depending on local conditions. In addition, the availability and suitability of alternative water supplies, such as reclaimed water, to meet existing and new commercial/industrial demands will be evaluated in the CUP process.

DOMESTIC SELF-SUPPLY

Domestic Self-Supply demands in the LWC Planning Area are projected to increase from the current 24 MGD to 31 MGD in 2025. Domestic Self-Supply includes potable water from a private supply, typically a domestic well, serving a private residence. Typically, property owners relying on such systems own, operate and maintain their domestic wells. Domestic Self-Supply needs are met almost exclusively using fresh groundwater.

Considering the limited options for Domestic Self-Supply, all future needs in this use category are expected to be met using fresh groundwater supplies. However, areas of concentrated domestic wells, such as Cape Coral and Lehigh Acres, are experiencing chronic "dry well" problems each dry season. Continued urban development and the resulting increases in domestic well installations in those areas will exacerbate these problems and may eventually lead the District to consider limitations on new well installations to preserve resources. Potential solutions may include, but are not limited to, connection of such areas to the municipal supply system and adoption of additional landscape ordinances that serve to minimize outdoor irrigation needs. When municipal supply becomes available to a particular area, municipalities should consider requirements that Domestic Self-Supply be terminated, and that such wells be properly plugged and abandoned in that area.

CONCLUSION

Meeting the projected increase of 197 MGD in net water demand in the LWC Planning Area during the next 20 years will require continued emphasis on alternative water supply development, including development of brackish groundwater resources, reclaimed water and seasonally available surface water. Development of additional storage, such as ASR, will also be critical to improving access to seasonal supplies to help meet future needs. The District should focus resources on facilitating ASR and other large-scale storage opportunities to facilitate development of seasonal water supplies. Attention also must be focused on continued assessment of conditions in the brackish Floridan Aquifer to facilitate the most responsible development of this resource.

Traditional water supplies, including fresh groundwater and surface water from the Caloosahatchee River, are not expected be adequate to meet all projected demands. Although development may be practicable in some areas, permitting new traditional supplies will depend largely on local resource conditions.

The largest change in water demand during the next 20 years will be seen in the Public Water Supply sector, which will increase from the current 128 MGD to 225 MGD. Over 140 new public water supply projects were evaluated as part of this plan update. The result of this process is that proposed new public water supply project capacity

exceeds the 2025 projected demand by 99 MGD. Projects specific to each major public water supplier are included, and focus on development of alternative potable water supplies to meet future needs. Individual utilities may also find some component of their future need can be cost-effectively met through new demand management programs and/or reclaimed water projects.

Regionwide, traditional resources are expected to be sufficient to meet the projected 17 MGD increase in agricultural demand in the next 20 years. However, local conditions may limit the availability of freshwater resources for agriculture (as well as other use categories). Agricultural users should also investigate and implement alternative supplies in basins where water availability is limited.

Domestic Self-Supply use is projected to increase by 7 MGD in the next 20 years. Concentrations of domestic wells in Cape Coral have resulted in rapidly declining Sandstone/Mid-Hawthorn aquifer levels. Similar concentrations of domestic wells in Lehigh Acres cause large, seasonal swings and a declining water level trend in the Sandstone Aquifer. The most obvious result of these conditions is the chronic well failures experienced in both areas during dry periods. These conditions are exacerbated each year with additional development of domestic wells. Local solutions, such as extending public water service to these areas, should be accelerated.

Thermoelectric Power Generation water supply needs are projected to increase by 67 MGD with the development of new power generation facilities in the LWC Planning Area. Specific locations for new facilities are unavailable. Investigation of water resource availability should factor heavily into site selection for these new facilities. Meeting these needs is likely to require use and/or development of alternative water supplies.

Other use categories, such as Recreational and Commercial/Industrial Self-Supply, are projected to grow by about 7.1 MGD and 2.3 MGD, respectively, in the next 20 years. These future needs are expected to be met largely through use and development of alternative water supplies.

The inclusion of specific Water Supply Development projects to address projected needs for the next 20 years is a new requirement of state law. The District recognizes there are public water supply utilities conducting detailed studies to estimate population and demand increases and identify the most appropriate water supply project options to meet those future needs. In addition, other large water users, especially thermoelectric utilities and agricultural users, will require time to identify the specific water supply projects to be developed once the locations of their water supply needs have been determined. For these reasons, the District will consider amending the regional water supply plans on an annual basis for the next three years to allow for the inclusion of additional, specific alternative water supply projects. Such amendments, if needed, are proposed to be done during January and February for the next three years. Only local governments that are affected by the additional alternative water supply projects would be required to amend their comprehensive plans, consistent with the requirements of

Section 163.3177(6)(c), F.S. It is anticipated at the end of the three-year period, this annual plan amendment process would be re-evaluated.

This LWC Plan Update contains a variety of water supply-related information useful to local governments in the preparation and amendment of their comprehensive plans. Within 18 months following the approval of this water supply plan update, local governments within the LWC Planning Area are required to revise their comprehensive plans and adopt revisions to their 10-Year Water Supply Facilities Work Plans to include specific water supply projects.

In addition, through the Water Protection and Sustainability Program, cost-sharing funds specifically for the construction of alternative water supply projects are provided on an annual basis through state revenues and matching District funds. Local governments whose alternative water supply projects are included in this plan update are eligible for consideration.